

Microsoft office Excel

Ms excel is a spreadsheet program include in the Microsoft office suite of applications. Spreadsheets present table of values arranged in row and columns that can be manipulated mathematically using both basic and complex arithmetic operations and function Ms excel was first released for Macintosh system in 1985, followed by the first windows version in 1987. A spreadsheet is an electronic counter part of a paper ledger sheet, which consists of grid formed by row and columns. In excel you enter the data in the worksheet.

SOME EXCEL VERSIONS ARE:

Version	Year	Other information
Excel 2.0	1987	
Excel 3.0	1990	
Excel 4.0	1992	Include in Ms office 3.0
Excel 5.0	1993	Include in Ms office 4.0
Excel 95	1995	Include in Ms office 95
Excel 97	1997	Include in Ms office 97
Excel 2000	2000	Include in Ms office 2000
Excel 2002	2002	Include in Ms office-xp
Excel 2003	2003	Include in Ms office 2003
Excel 2007	2007	Include in Ms office 2007
Excel 2010	2010	Include in Ms office 2010
Excel 2013	2013	Include in Ms office 2010

Feature of Ms Excel:

- ✓ Pivot table creation.
- ✓ Conditional formatting.
- ✓ Sorting and filtering the data.
- ✓ Basic mathematical work.
- ✓ Data can be present in graph
- ✓ Use function and formula to manipulate the data.
- ✓ Automatic calculation.
- ✓ Data entry work.
- ✓ Create and edit formula.
- ✓ Data analyzing and report.
- ✓ Create annual report in business etc.

Use of MS Excel:

- ✓ Sales and cost analysis.
- ✓ Financial report.
- ✓ Stock inventory. Payroll
- ✓ Invoicing Scientific calculation.
- ✓ Account payable and receivable

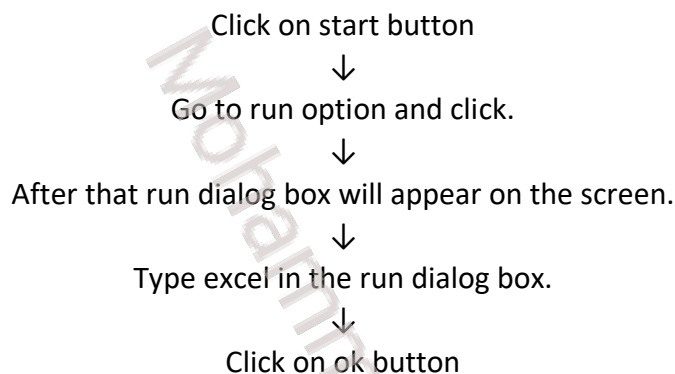
Advantage of MS Excel:-

- ✓ Easy to enter and edit data.
- ✓ Ability to create graphical or visual representation of your data.
- ✓ Can work quickly in analyzing large amount of data.
- ✓ Easy to integrate excel with other business application.
- ✓ Can be used for what if analysis and decision making

Disadvantages of MS Excel

- ✓ Difficult to troubleshoot or test
- ✓ Incapable of supporting quick decision making.
- ✓ Unsuitable for business continuity.
- **Extension name of MS Excel-2007: XLSX**
- **Executable file name of MS Excel-2007- Excel.exe**
- **How to open MS Excel-2007**

First method :



- **Second method:-**

Directly double click on the Ms Excel icon present on desktop

Some Terminology

Spreadsheets:

Spreadsheet is a table of values arranged in rows and columns. Spreadsheet application is computer programs that let you create and manipulate spreadsheet electronically. Ms excel is a popular spreadsheet based software program that help to enter, calculate, manipulate and analyze set of numbers

Workbook:

Workbook is a collection of worksheet that is linked together and allow user to work. It store various types of data in a single excel file.

•Worksheet:

Rectangular grid of rows & columns that labels and values are inserted into it. Worksheet is a collection of cell where you keep and manipulate the data.

Cell:

Cell is the basic unit of the spreadsheet. A cell is formed by the intersection of row and Columns and this intersection gives the cell a unique address

Cell Address:

Combination of row number and columns heading. (For ex-A1, B3)

Range of cell:

A range of cells is a group of cells forming a rectangular area. Cell range is only part of Worksheet is needed when a certain part of worksheet meet

Label:-Non-numerical data in a cell

Table:- A logically distinct group of cells, visually distinguished with borders and shading

Row number: A horizontal group of cell termed as row. The default row height is 12.75 points. The maximum Limit of height of row is 4.09.5 points (547 pixels). In Ms excel 2007 maximum number of row is 10,48,576.

❖ Columns

In Ms excel the columns is defined as the vertical space from top to bottom of window. In Ms Excel-2007 maximum number of columns is XFD (16384)

❖ **Columns heading:** The name given to each column is termed as columns heading. The columns heading name are A to Z. (16384)

❖ Sheet tab:

A sheet tab is just like a page consists of notebook. Using sheet tab you can move one sheet to another quickly. Sheet tab appear at the bottom of the document window with name sheet 1, sheet 2 ,Sheet 3.

Select all:

The select all button is the first point where the row numbers and column heading meet.

❖ Grid line:

❖ - Dotted grey colour line display around the worksheet. Name box: The name box display the address of the active cell.

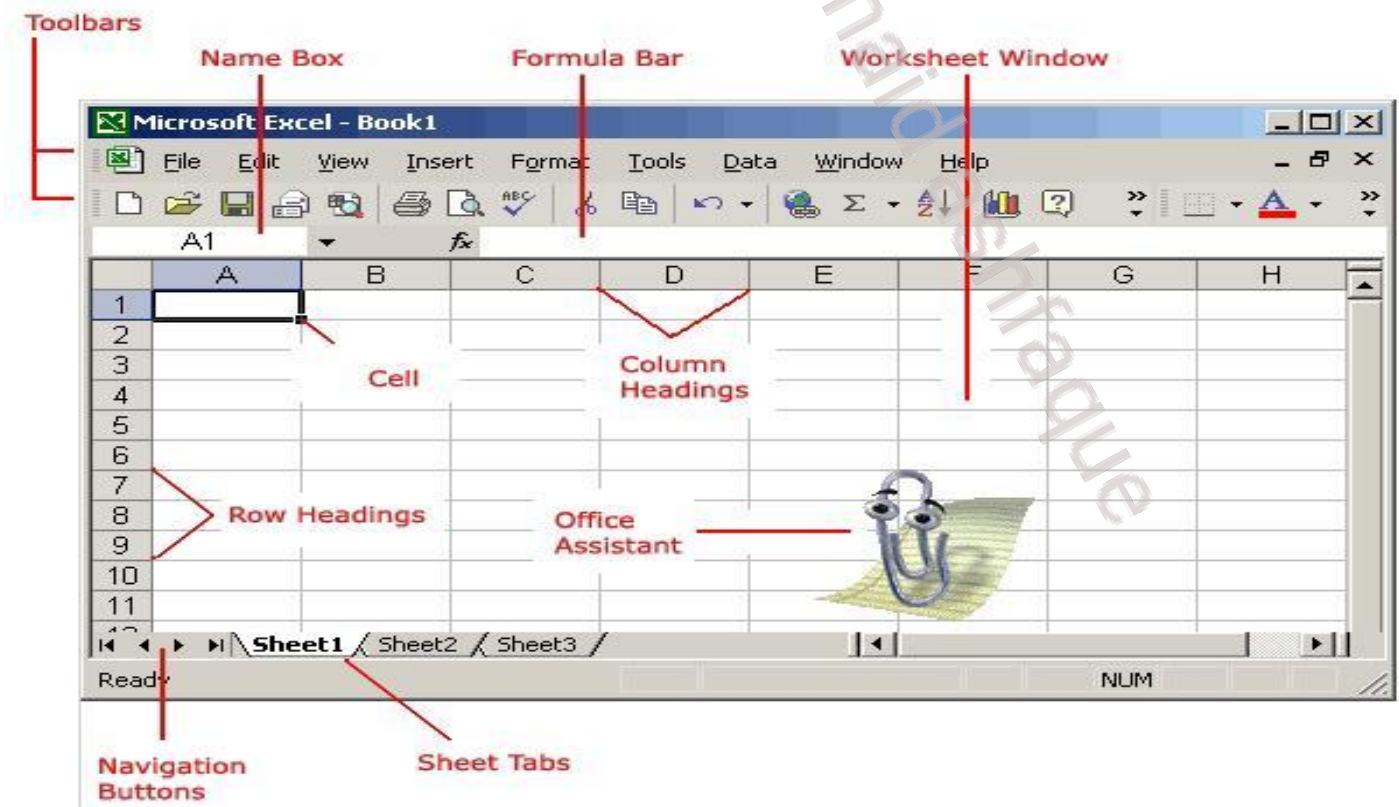
❖ Constant value:

❖ Data within a cell is called a constant value in excel. These can include text, decimal number, date And time, currency, percentage, and specific notation.

❖ Formula bar:

A formula bar is a sequence of value, cell references, names, function, or operators that produce a new value from existing values.

BASIC COMPONENTS OF MS-EXCEL



	A	B	C	D	E	F	G	H	I	J
1										
2										
3	NAME	ROLL N	SUBJECT				TOTAL	PERCEN	PASS/	DIVISION
4			MATH	SCIEN	S.SCINCE	HINDI				
5	JUNAID	31003	75	46	85	85	291	72.75	pass	First
6	SWEETY	31004	80	85	85	75	325	81.25	pass	First
7	AAPI	31005	85	28	75	75	263	65.75	fail	First
8	DOLLY	31006	75	45	45	45	210	52.5	pass	First
9	SUJAIN	31007	75	65	46	46	232	58	pass	First
10	SABIHA	31008	45	35	45	30	155	38.75	pass	thaird
11	ASHRAF	31009	40	45	42	44	171	42.75	pass	second
12	NAZISH	31010	55	80	65	45	245	61.25	pass	First
13	ZEESHAN	31011	70	85	75	65	295	73.75	pass	First
14	SANILA	31012	25	35	45	55	160	40	fail	second
15	ALTAF	31013	65	75	80	65	285	71.25	pass	First
16	FARAG	31014	75	70	85	55	285	71.25	pass	First
17										

TOTAL:- =C5+D5+E5+F5 **second method=** =SUM(C5:F:5) =SUM(1ST:Last subject)

- **PERCENT** =G5/4 " total/total subject
- **Pass/fail** =if(AND(C5>=30,D5>=30,E5>=30,F5>=30),"pass","fail")
- **Division** =IF(H5>=50,"First",IF(H5>=40,"second",IF(H5>=30,"thaird","fail")))

TO CREATE RECEIPT, AMOUNT DETAILS

	A	B	C	D	E	F	G
1							
2							
3							
4							
5	ITEM	RATE	QUAN	T. AMOUNT	GST 18%	DIS 5%	PAY AMO
6	WORD BOOK	200	12	2400	432	120	2712
7	TALLY BOOK	400	10	4000	720	200	4520
8	EXCEL BOOK	300	12	3600	648	180	4068
9	BLANK PAGE	800	10	8000	1440	400	9040
10	colour page	500	15	7500	1350	375	8475
11	PHOTO PAPER	1400	10	14000	2520	700	15820

TOTAL AMOUNT. =B6*C6 (=Rate*quantity)

GST 18%. =D6*18% (T.AMOUNT*TAX%)

DISCOUNT. =D6*5% (T. Amount*dis%)

Pay amount =D6+E6-F6 (T. AMOUNT+TAX-DSCOUNT)

- **Copy the content one cell to another**

At first select the cell.
↓
Click on home tab.
↓
Click on copy (Ctrl+C)
↓
Move the cell pointer where you want to paste the same content.
↓
Click on home tab.
↓
Click on paste under the clip board group.

- **Moving the content one cell to another**

At first select the cell.
↓
Click on home tab.
↓
Click on cut option under the clip board group.
↓
Move the cell pointer where you want to set the contents
↓
Click on home tab
↓
Click on paste under the clip board group.

- **Moving cell pointer quickly around the worksheet:**

Click on home tab.
↓
Click on go to option under the find & select group.(Ctrl+g)
↓
After that go to dialog box will appear on the screen.
↓
Type cell address in the box.
↓
Click on ok button.

NOTE:-Go to option is used for quickly active your required cell in current worksheet.

- **Filling cell automatically:**

This option is used to fill the same matter either row and column and increasing of number, dates

- 1. Fill cell down:-** This option is used to copies the contents and formats of the top cell or cell of a selected range into the below.

At first type the text in a cell.
↓
Select the cell in down with source cell.
↓
Click on home tab.
↓
Click on fill option under the editing group.
↓
Click on fill cell down.

- **Fill cell up:** - This option is used to copies the contents and formats of the bottom cell or cell of a selected range into the upper cell.

At first type your required text in a cell.



Select the cell in up with source cell.



Click on home tab.



Click on fill option under the editing group



Click on fill cell up.

- **Fill cell Right/Left:** This option is used to copies the contents and formats of a selected range of cell into the Right or Left cell.

At first type your required text in a cell.



Select the cell in Right/Left with source cell.



Click on home tab.



Click on fill option under the editing group.



Click on Fill cell Right/Fill cell Left.

- **Linking Cells:**

You can refer to cells in a formula by simply using the cell's reference name.

Enter some data or a label into cell A1



Select cell A2 and type: A1



Now, when the information in A1 is changed, those changes will automatically show up in cell A2 You can even link cells from different worksheets! For example, in Sheet2 select cell A1 and type



=My First Spreadsheet! A1



=sheet name! Cell address

- **Using Cell References In Formulas:**

In Cell A2 type "A*12



Now, change the value in A1



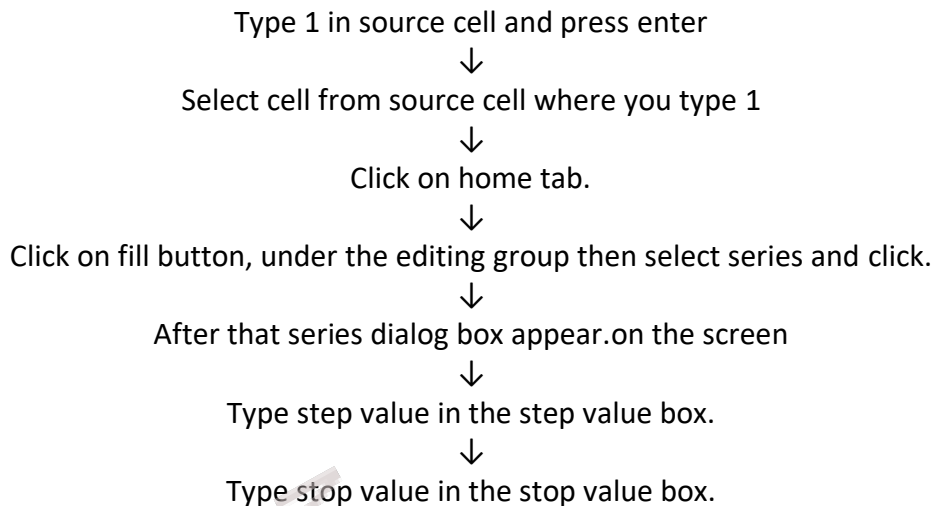
Excel will automatically update the value shown in cell A2

- this is just like a link the value in A1 is substituted in before Excel performs the calculations in call A2
- **This works with cells linked in between different worksheets too.**

❖ **Series.creating**

It gives the selected range of cell with one more series of ember and date

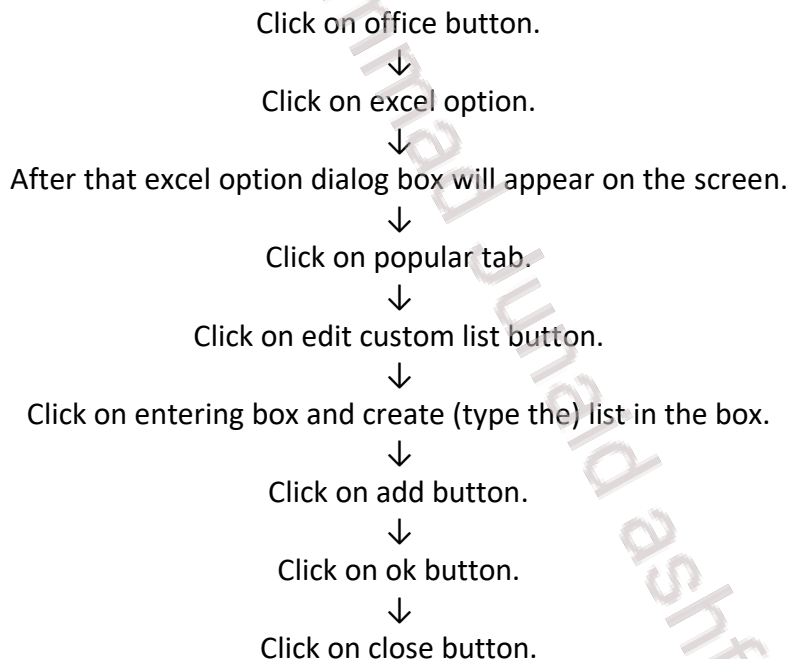
- ❖ **Date series** -A date series of day, week days, months, and year can be generated by specific date
- ❖ **Auto fill:** An auto fill series will be automatically fill the series
- ❖ **Linear series:** A liner series will be generated by incrementing the value by step value.



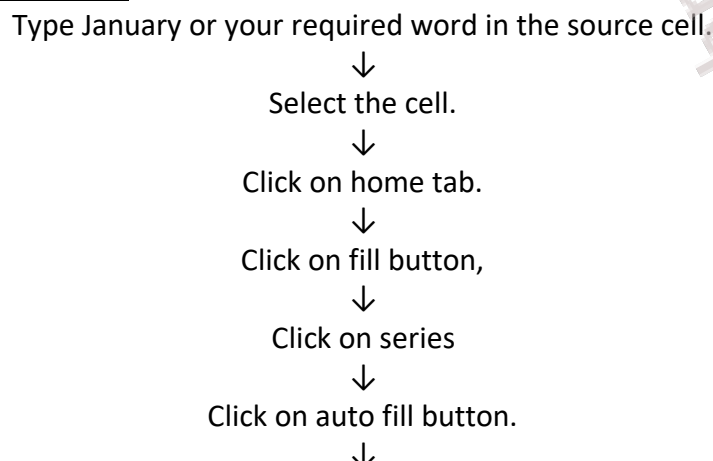
- **Custom series -**

Entering a series is similar to fill the contents of cell for a group of cell, such as suppose you want to create a series of a month such as January, February, and March etc. These series are generated because they are already defined in excel.

- **Creating custom series:**



- **To insert custom series:**



Click on ok button.

- **To delete custom series:**

Click on office button.



Click on excel option.



After that excel option dialog box will appear on the screen.



Click on popular tab.



Click on edit custom button.



Select your required list which you want to delete.



Click on delete button.

- **WORKING WITH ROWS AND COLUMNS**

- **to insert new row or columns.**

Move the cell pointer where you want to insert new row & columns:-



Click on home tab.



Click on insert row/columns under the cell group.



Click on insert.

- **To delete row or columns:**

At first move the cell pointer on your required row or columns, which you want to delete.



Click on home tab.



Click on delete button, under the cell group.



Click on delete row/columns

- **To change row height:**

Select the row which you want to change height.



Click on home tab.



Click on format button under the cell group.



Click on row height.



After that row height dialog box will appear on the screen.



Type height number in the number box.



Click on ok button.

- **To change columns width:**

Select the column which you want to change width.
↓
Click on home tab.
↓
Click on format button under the cell group.
↓
Click on columns width.
↓
After that columns width dialog box will appear on the screen.
↓
Type width number in the box.
↓
Click on ok button

- **To hide row or columns:**

Select the row or columns which you want to hide.
↓
Click on home tab.
↓
Click on format button under the cell group.
↓
Click on hide or unhide.
↓
Click on hide row or columns.

- **To unhide row or columns:**

Select all row/columns.
↓
Click on home tab
↓
Click on format button under the cell group.
↓
Click on unhide row/columns.

- **Freezing row/columns:**

- **When you are working with a long list or a large table, you can Freeze the row/columns title. So they remain in sheets.**

Select row/columns heading which you want to freeze.
↓
Click on view tab.
↓
Click on freeze panes under the window group.
↓
Click on freeze panes

- **To remove freezing:**

Click on view tab.
↓
Click on freeze panes under the window group.
↓
Click on unfreeze panes.

- **WORKING WITH WORKSHEET**

- **To insert new worksheet:**

- ❖ **First method:**

Click on home tab.
↓
Click on insert button under the cell group.
↓
Click on insert sheet

- **Second method:**

At first active the worksheet.
↓
Click on home tab
↓
Click on format button under the cell group.
↓
Click on rename, sheet option.
↓
Type new sheet name and press **enter** key.

- **To delete the worksheet:**

At first active the worksheet which you want to delete.
↓
Click on home tab.
↓
Click on delete button under the cell group.
↓
Click on delete worksheet.

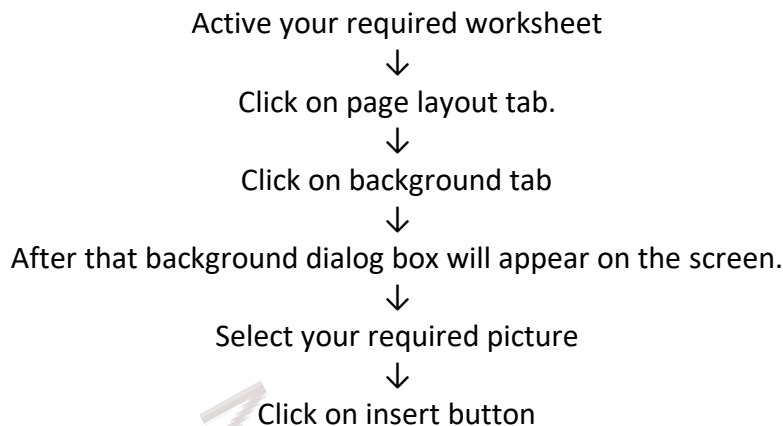
- **TO PROTECT WORKSHEETS**

This option is used to protect your current active worksheet.

At first active your required worksheet which you want to protect.
↓
Click on home tab,
↓
Click on format button under the cell group.
↓
Click on protect sheet option.
↓
Type password in the password box.
↓
Click on ok button.
↓
A confirmation password dialog box will appear on the screen.
↓ ↓
Type same password in the box.
↓
Click on ok button.

- **To change the sheet background:**

This option is used to apply pictures to the background of your active worksheet.



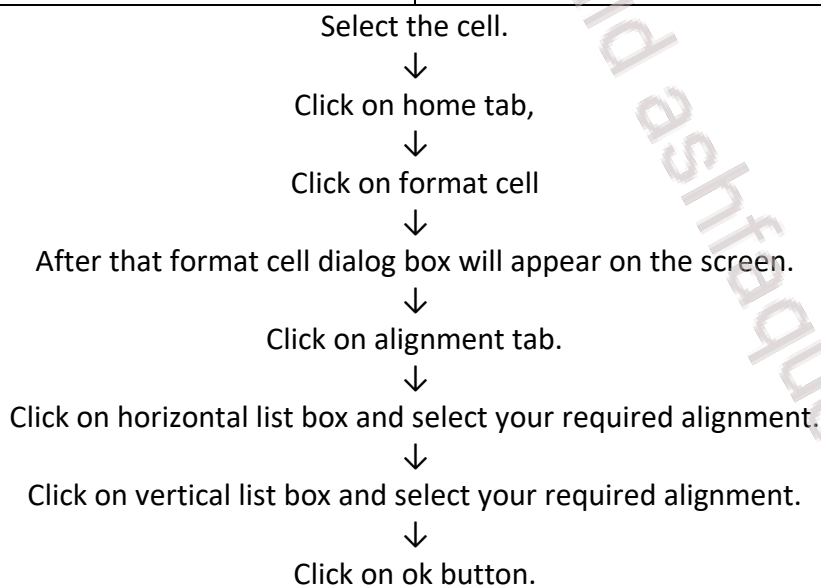
- **FORMAT CELL**

Alignment:

Ms excel allow you to change the horizontal and vertical placement of an entry in a cell. There are two type of alignment 1. Horizontal and 2. Vertical alignment

Horizontal alignment 2.Vertical alignment

HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT
General	Top
Left	Centre
Centre	Bottom
Right	Justify
Fill	Distribute
Justify	
Distribute indent	
Center across selection	



- **Orientation:**

This option is used to change the direction in an angle style. Rotate text to a diagonal angle or Vertical orientation text from clockwise.

Select the cell or range of a cell.



Click on home tab,



Click on format cell.



After that format cell dialog box will appear on the screen



Click on alignment tab.



Select your required text orientation in the box.



Click on ok button

- **Merge. Cell**

This option is used to combine two or more selected cell into a single cell.

Select the cell which you want to merge.



Click on home tab,



Click on format cell button.



Click on alignment tab,



Click on merge cell checked box.



Click on ok button,

- **Conditional formatting:**

This option is used to apply formats to selected cell (data) that Required conditions based on value. It is not data based features But you can easily highlight most important data from a database.

Select the cell.



Home tab.



Click on conditional formatting icon.



Click on highlight cell rules Or more option in a list



Select your condition in a list Either greater than, less Than, between, equal to, not equal to and more rule.



After selecting "greater than" option a dialog box will appear on the screen.



Type your required value in the format cell data greater than box (ex- 85)

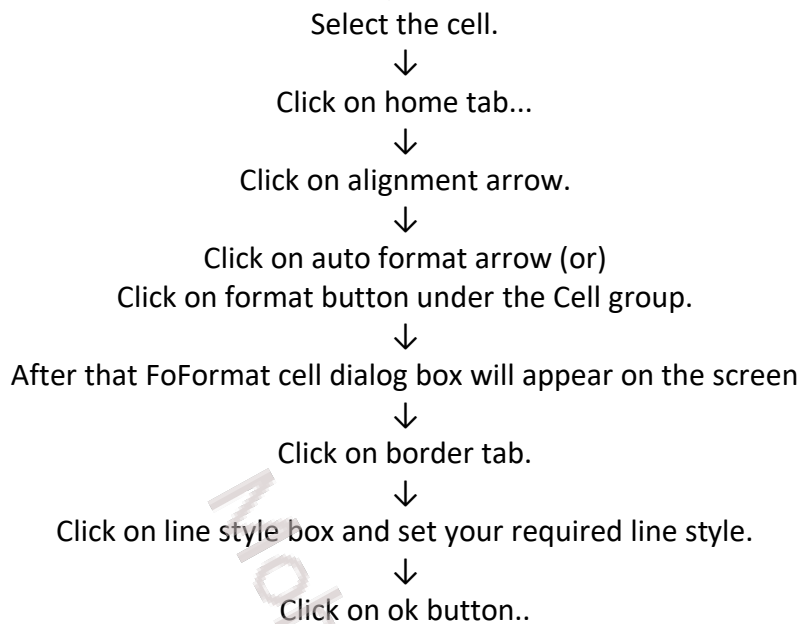


Click on with drop down box and select your required colour.

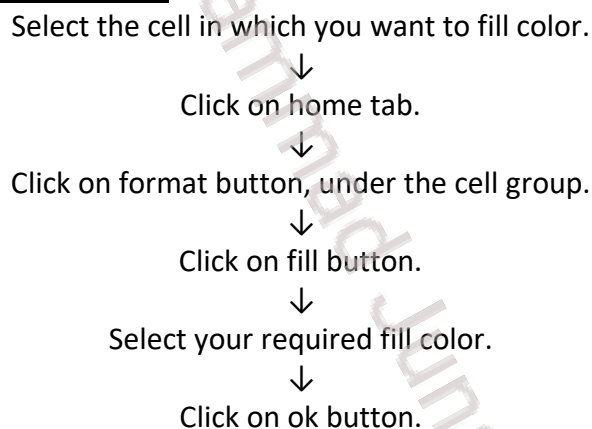


Click on ok button.

To create border around the cell:

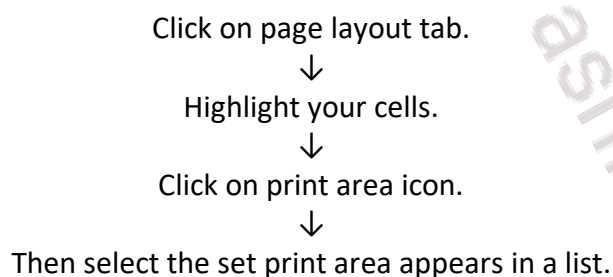


- **To fill color in the selected cell**



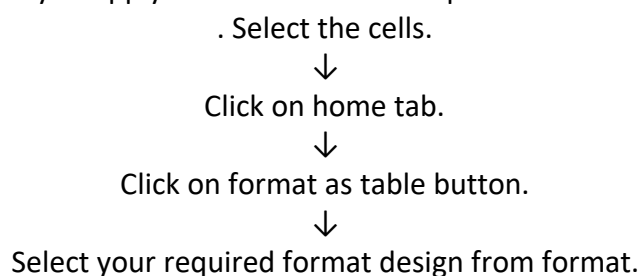
- **To set print area:**

This option is used to selected range of cell as the print area, which is the only portion of the worksheet that will be printed.



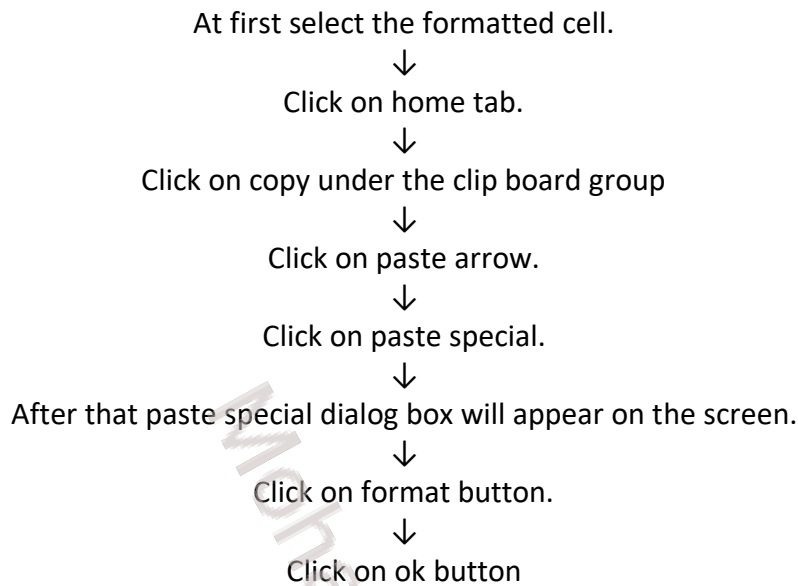
- **Auto format:**

Auto format offers a quickly way to apply standard format to a part of worksheet

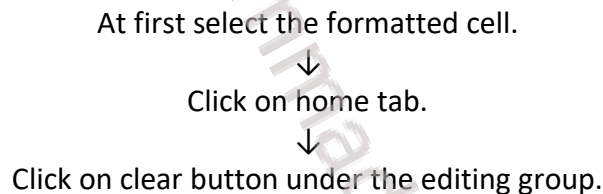


- **To copy only format:**

This option is used to copy the formatting.

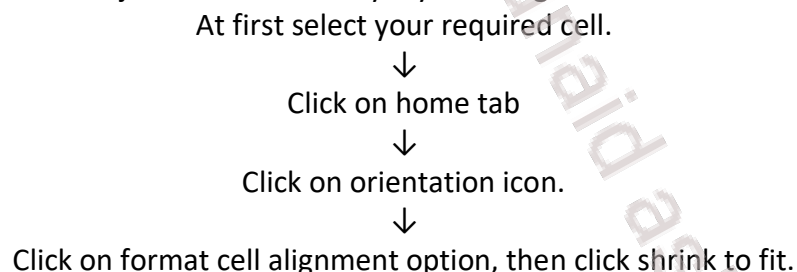


- **To delete format:**



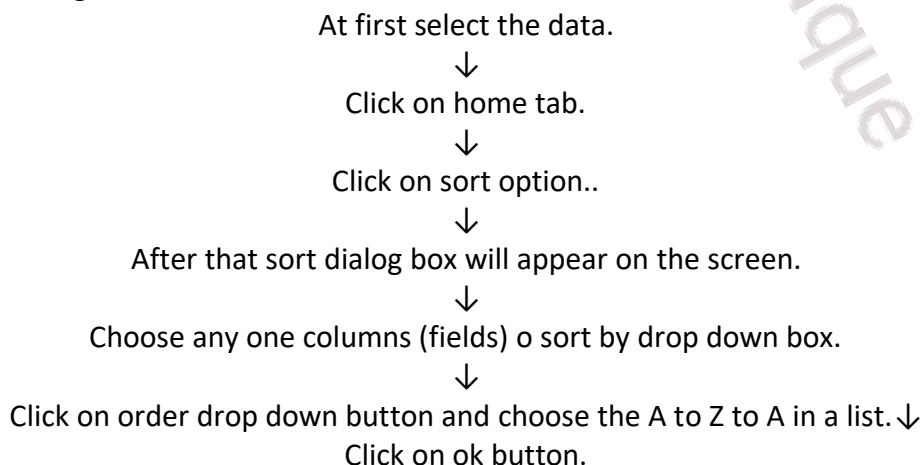
- **Shrink to fit**

This option is used to reduce the apparent size of font characters. So all data in selected cell fits within the column. The character size is adjusted automatically if you change the column width.



- **Sort:**

This option is used to arrange the data records in selected rows or lists alphabetically, numerically in ascending or descending order.



- **Filter (Ctrl+shift+L):**

This option is used to filter the selected data automatically using list boxes, display the record quick way to select only those items you want to display in a list.

Select the data
↓
Click on data tab
↓
Click on filter

- **Chart:**

You can make a graph on your data. Various types of graph available in Ms Excel OR This option is used to display series of numeric data in a graphical format to make it easier to understand large quantities of data the relationship between different series of data.

At first create a chart.

↓
Select the data.
↓
Click on insert tab.
↓
Click on chart.

↓
Select the required chart and click.

- **To change the type of graph:**

At first select the graph,
↓
Click on design tab,
↓
Click on chart type under the type group.
↓
After that chart type dialog box will appear on the screen.
↓
Select your required chart.
↓
Click on ok button.

- **To change the color fill in chart:**

Click on right mouse button on the object in a chart.
↓
After that prop menu appear.
↓
Select the format data series **or** Double click on the object in a chart.
↓
After that format data series dialog box will appear on the screen.
↓
Click on fill in series option.
↓
Choose the required no fill, solid fill, gradient fill, picture or texture fill and pattern fill option
↓
Click on ok button.

• Making a Pie Chart

- ❖ For an example we'll need some actual data to chart so generate a list of monthly expenses such as this one.

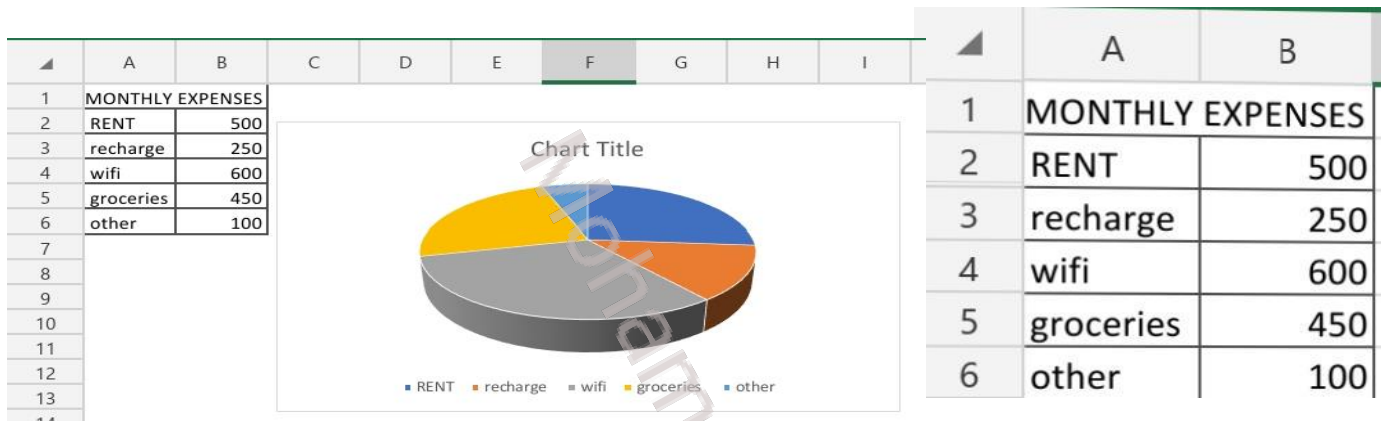
Select the data that you wish to chart (Including the labels: recharge, rent etc...).



From the Insert tab, click on "Pie" and select the appropriate Type of pie chart



You should get something that looks like this...→



Add a chart title, select the Layout tab and click on "Chart Title"

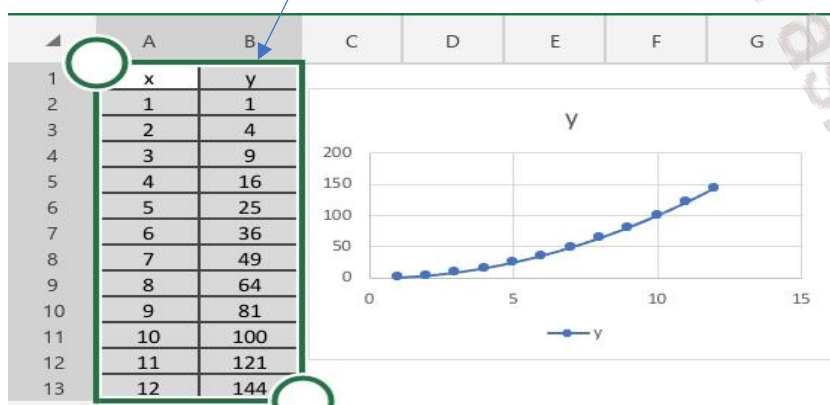
- Almost everything in the graph can edit by simply right-clicking on the desired component of the graph and selecting the appropriate option.
- For this example, We'll choose the "Above Chart" option.

➤ MAKING AN XY SCATTER PLOT

- **Create a table in which the values of the 'Y' column are equal to the square of the values in the adjacent 'X' column**

Select the XY data we entered→

From the **Insert tab**, click on "**Scatter**" and select the appropriate Type of pie chart, in this case, the "**Scatter with smooth lines and markers**" chart sub-type



	A	B
1	x	y
2	1	1
3	2	4
4	3	9
5	4	16
6	5	25
7	6	36
8	7	49
9	8	64
10	9	81
11	10	100
12	11	121
13	12	144

=A2*A2

Recall: To edit the graph, use the options found under the Layout tab. From there you can add/edit the chart title, axis titles, legend, etc.

➤ Line Graphs vs. Scatter Plots:

- So what is the difference manways
- A Line Graph is almost like a bar graph, except that instead of using bars, it uses points with a line connecting each of the adjacent points together

- An XY Scatter Plot is the familiar type of graph we all do in math where you have an x-axis and a y-axis that is used to represent coordinates.
- As well, on a Line Graph, you can use labels on the x-axis (ex. Toronto, Ottawa, Montreal, etc...) while on a XY Scatter Plot, you can only use numbers (ex. 0, 1, 5.5, %, -0.23, etc...)

❖ **Linking an Excel Chart into Word:**

Highlight a chart in Microsoft Excel and Copy it.



Open a Microsoft Word document and Paste it.

Note, if the chart in Excel changes, the chart in Word WILL change as well.

❖ **Goal seek:**

This option is used to adjust the value in a specified cell until a formula that is dependent on that cell reaches a target value.

Click on cell in target the value.



Click on data tab.



Click on what if analysis.



Click on goal seek



After that goal seek dialog box will appear. On the screen



Click on ok button

❖ **SET CELL:-** Automatic put the cell address (Target the value). This cell must be referenced the cell you specified in the set cell box.

❖ **TO VALUE:** Type the number to specify the **new** value or target value you want to solve for.

❖ **BY CHANGING** Enter a reference to the cell that contains (source the cell reference ex. EE) the value you want to adjust during goal seek.

❖ **Scenario manager:** This option is used to create and saves scenario, which are sets of data you can use to view the result of what if analysis.

At first select the range of changeable data.



Click on data tab.



Click on what if analysis.



Click on scenario manager.



After that scenario manager dialog box will appear on the screen.



Click on add button.



After that add scenario manager dialog box appear on the screen.



Type the scenario name in the scenario name box.(Ex-Rice)



Click on ok button

To Show scenario manage
↓
Click on what if analysis.
↓
Click on scenario manager
↓
After that scenario manager dialog box will appear on the screen.
↓
Choose the list of scenario you required.
↓
Click on show button OR Click on summary.
↓
Click on close button.

❖ **Formula Auditing**

○ **Trace Precedents:**

This option is used to draw tracer arrows from the cell that supply values directly the formula in the active cell (Precedents).

Click on cell (Cell are use in formula)
↓
Click on formula tab.
↓
Click on trace precedents icon.

○ **Trace dependents:**

This option is used to draw a tracer arrow to the active cell from formulas that depend on the value in the active cell.

↓
Click on cell (This value is used to other cell)
↓
Click on trace dependents icon.

○ **Remove all arrows:**

This option is used to remove all tracer arrows from the worksheet

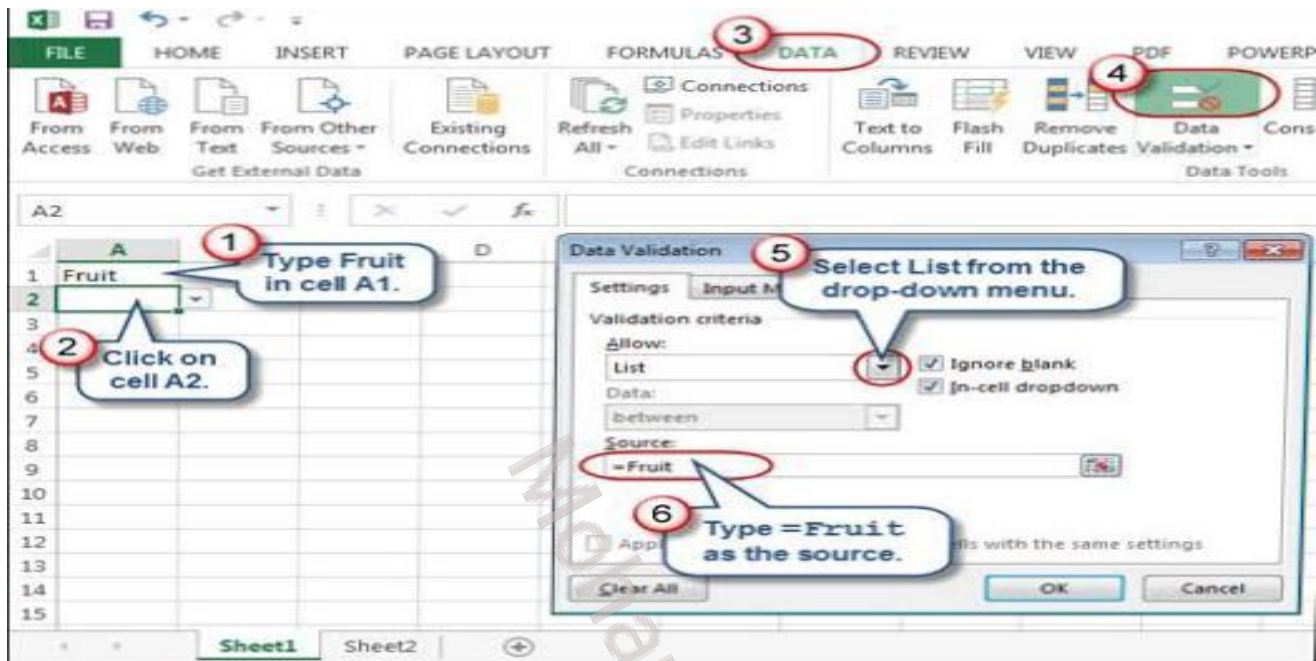
Click on formula tab
↓
Click on remove arrows.

○ **Data validation**

This option is used to define what data is valid for individual cells or cell ranges restricts the data entry to a particular type such as whole numbers and sets limits on the valid entries in your condition.

Highlight cell or cell of range in your required validation.

↓
Click on data tab.
↓
Click on data validation icon.
↓
Select whole number from allow drop down arrow button.
↓
Put the value in minimum text box. (75)
↓
Click on ok button.
↓



• **SUB TOTAL**

This option is used to automatically calculate subtotals and grand total in a list for a column by with a summary function, such as sum or average by using the sum total function. You can display more than one type of summary function for each column.

At first create a data.



Select the data.



Click on data tab.



Click on subtotal under the outline group.



After that subtotal dialog box will appear on the screen.



Click on use function box and select your required function.



Click on add subtotal and select your columns heading.



Click on ok button.

• **Pivot Table:**

This option is used to quickly summarize, analyze, explore and present summary of large amount of data. Use a pivot table report to analyze numerical data in detail and to answer unanticipated questions about your data. The pivot table field list you can add, rearrange or remove field to show data in pivot table exactly the way that you want.

• **Pivot Chart:**

A pivot chart report can help you visualize pivot table report summary data so that you can easily see comparisons, patterns, and trends. Both reports enable you to make informed decisions about critical data in your enterprise.

- **Pivot Table is specially designed for:**

- ✓ Querying large amounts of data in many user friendly ways.
- ✓ Subtotaling and aggregating numeric data. Summarizing data by categories and subcategories, and creating custom calculation and formulas
- ✓ Expanding and collapsing levels of data to focus your result, and drilling down to details from the summary data for areas of interest you
- ✓ .Moving rows to columns or columns to rows to see different summaries of the source data.
- ✓ Filtering, sorting, grouping and conditionally formatting the most useful and interesting subset of data to enable you to focus on the information that you want.
- ✓ Presenting concise, attractive and printed report.

- **To create Pivot Table:**

Select your required data.



Click on insert tab.



Click on pivot table icon.



After that pivot table dialog box will appear on the screen.



Automatic selected cell range in the table/range box to verify the range of cells.



To choose where you want the pivot table report to be placed.

- (1) To place the pivot table report in a new worksheet starting at cell **AB** click new worksheet.
- (2) To place the pivot table report at a specific location in an existing worksheet, select existing worksheet, and then in the location box, specify the first cell in the range of cells where you want to position the pivot table report.



Click on ok button.



After that pivot table field list task pane and appear the pivot table layout in worksheet.

- **FUNCTION:**

Functions are special purpose program that accept data and return a value after performing calculations on data. Function is mainly of six categories.

They are following:

- (1) Mathematical (2) Date & time function (3) Statical function.(4) Financial function
(5) Logical function. (6) text function**

(Mathematical function)-Mathematical function is a such type of function in which you can do any types of mathematical function

- **Sam function:-** It is used for addition of number **=sum(A1:A1) ↓, →, =sum(2,3,9,8,6) ↓, →, =sum(10+20+15)**
- **Subtract function:-** It is used for subtract of two number. **=sub(A1-A2)**
- **Product function:-** It is used for multiplication of number **=product(3,4) ↓**
- **MOD function:-** It is used for number is divided by a divisor. **=MOD(15,4) ↓ , 3**
- **SORT function:-** It is used to give square root number. **=SQRT(49) ↓, 7**
- **FACT function:-** It is used for factorial number of value. **=FACT(4) ↓ ,64**
- **Power function:-** It gives power of a number.**=Power(6,2) ↓,36**
- **36 Even function:-** Return number rounded up to the nearest even integer. **=Even(9) ↓10**

Odd function: - Return number rounded up to the nearest odd integer. =**Odd(8)**↓9

- **(2) Date & time function:**

- **Now function:**-Show the current date and time of your system at present. =**Now()**↓
- **Today function:**- Show the current date in your system at present. =**Today()**
- **Days 360 function:** - This function is used to calculate the number of days between two days
 - =**days360("03/02/1982","09/08/2006")**↓

- **(3) Statical function:** -

Average function: This function is used to calculate and return the average of the numeric values in the range of cells. =**average(10,9,7,27,2)**↓11

Maximum function: This function is used to find the largest value in the selected range of cells.

=**max(20,7,27,2)**↓27

Minimum function: This function is used to find the smallest value in the selected range of cells.

=**min(20,7,27,2)**

- **(4) Financial function:**

- **FV function:** - Return the future value of an investment based on period consists of payment and interest rate. **fv(12%,24,-500)**↓ =59077=62
- **PV function:** - Return the present value of an investment based on period consists of payment and interest rate. =**pv(12%,24,-500)** ↓
- **NEPR function:** This function is used to return the number of period for an investment based on period consists of payment and interest rate. =**NEPR(6%-100,1200)**

• **(5) Logical functions** Logical functions are used to test the condition, if condition is true or false depending on the given conditions and return the true or false value.

If function well return depending the value by the and, or, not, logical function.

- **AND function:**- This function is used for return the true value if both arguments passed is true another ways false. =**And(45730,907105)**

. function:-This function is used to return true if any one of the argument is true. =**or(45730,907105)**

- **(6) Text functions**

Concatenate function: It joins several text into one text. **Concatenate("jun","ashfa")**

Find function: This function is used for case sensitive returned number of character. **Find("j","computer")**

- **Lower function:**- It converts all upper case letters in a text string into small.

=**lower("JUNAID")**↓ junaid

Upper function:- It converts all lower case letters in a text string into capital letter.

=**upper("junaid")**↓JUNAID

- **Left function:** To show the first character from the left side of string.

=**left("Junaid ashfaque",4)**↓ juna

- **Right function:** To show the first characters from the right side of a string

=**right("Mohammad Junaid",4)**↓ naid

- **Char function:** - Return the character specifies the code number from the character set for your computer **char("45")**

- **Code function:** - Return a numeric code for the first character a text. **Code ("J")**↓

- **exact function:**-Check the two text string and exactly the same and return true or false.

=**exact("JUNAID", "junaid")**↓

- **Len function:**-T show the length of a text string, spaces are counted as character. **Len("junaid")**↓

- **Proper function:**- To convert a text into a proper case, the first letter capital in each word.

=**proper("mohammad Junaid ashfaque")** ↓

- **Built-In Functions:**

Excel comes with hundreds of built-in functions which can be used in your formulas. However, the majority of functions need data in order to be useful. For example, in order to use the Sum function, you need to tell Excel which values to sum up.

These built-in functions can operate by themselves, on a single value, or on multiple values depending on what kind of operation is being performed. For example, the Pi function simply returns the value of Pi, the Square Root function needs only one number to work while the Z-Test function (from stats) requires three different numbers in order to work.

- **Built-In Functions are structured like this:**

- **.Function Name (Parameter1.)**

- The Function Name always comes first and usually describes what the function does.
 - The Parameter is the information that the function needs in order to work.
 - This can be a single value or a set of values and can be represented by either numbers (ex. 1,2,3,5, 8,13, etc...), cell references (ex. A1, B2, C3:D4, etc...) or text.
 - The Parameters always come second and are always contained within parentheses "()"

- **QUICK REVIEW OF FUNCTIONS**

- **SUM()** Adds all numbers in a range of cells
- **PRODUCT()** Multiplies all the numbers in a range of cells
- **COUNT()** Counts all the cells that contain numbers in a range of cells
- **AVERAGE()** Calculates the average in a range of cells
- **MEDIAN()** Calculates the median in a range of cells
- **MODE()** Calculates the mode in a range of cells
- **POWER()** Calculates a number raised to a power
- **SQRT()** Calculates the square root of a number
- **MAX()** Returns the largest number in a range of cells
- **MIN()** Returns the smallest number in a range of cells
- **IF()** Checks whether a condition is met, and returns one value if true, and a different value if false
- **COUNTIF()** Count the number of cells within a given range that meet the given condition
- **PI()** Returns the value of Pi, accurate to 15 digits
- **MOD()** Returns the remainder when a number is divided by a divisor
- **LEN()** Returns the number of characters in some text
- **ROMAN()** Converts an Arabic numeral to Roman, as text
- **CONCATENATE()** Joins several pieces of text to each other
- **TODAY()** Returns the current date
- **NOW()** Returns the current date and time